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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
08/817,567	04/11/97	ODEMARK	2373707C9296

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EXAMINER

COCKS, J

ART UNIT	PAPER NUMBER
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3743

DATE MAILED: 08/14/98

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
08/817,567

Applicant(s)
Odemark et al.

Examiner
Josiah Cocks

Group Art Unit
3743



☒ Responsive to communication(s) filed on Apr 11, 1997

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 1-6 is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1-6 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☒ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☒ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☒ Some* ☐ None of the CERTIFIED copies of the priority documents have been
☐ received.

☒ received in Application No. (Series Code/Serial Number) 08/817,567.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: translated copy of NO 177162

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s) _____

☐ Interview Summary, PTO-413

☒ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: The word "detonated" is spelled incorrectly on page 1 line 33. Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. Regarding claim 1 line 1 and claim 4 line 1, the phrase "for example" renders the claims indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

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5. Claim 1 recites the limitation "said gas cloud region" in line 5 of the claim. There is insufficient antecedent basis for this limitation in the claim.

6. The term "moderate" in claim 3 is a relative term which renders the claim indefinite. The term "moderate" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Therefore, the speed of the ignition device through the guidance tube is indefinite.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1-2 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Bjorkhaug et al.* in view of *Lerouge et al.* *Bjorkhaug et al.* discloses all the limitations of claims 1-2 including;

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a method and apparatus for igniting combustible gas comprising a pellet ignition device (14 Fig. 1) launched towards a region of combustible gas (18 Fig. 1) and propelled by means of a pressure driven device (10 Fig. 1) through a guidance tube (28 Fig. 1), the ignition device undergoing a reaction to produce a cloud of sparks for active ignition of the gas (26 Fig. 1). The apparatus includes a magazine with a loading mechanism (42 Fig. 2), and a control device (48 Fig. 2). *Bjørkhaug et al.* does not disclose a predetermined time for activation and reaction of the ignition device adapted to a particular flare and application, or a trapping device to hold the ignition device prior to its reaction.

Lerouge et al. teaches an ignition device for igniting combustible gas in which the combustion time of the ignition elements (36 Fig. 5) is predetermined based on the distance of a point (7 Fig. 1) above the of the end of a the torch/flare tower (1 Fig. 1) (column 4 lines 15-19) in order for the ignition elements to be entirely extinguished after they have ignited the gas (column 4 lines 57-60). *Lerouge et al.* also teaches the use of boxes (23 Fig. 5) which serve to hold or trap cartridges (22. Fig 5) containing ignition elements (36 Fig. 5) prior to reacting and igniting the gas issuing from the torch/flare tower.

Therefore, in regards to claims 1-2, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify *Bjørkhaug et al.*; to provide a predetermined combustion time of the ignition device based on the a particular torch/flare tower as taught by *Lerouge et al.* because, this allows for complete combustion of the ignition device, so that once it has ignited the combustible gas, it will not be capable of setting the surrounding

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environment of the torch/flare tower on fire; and to include holding or trapping boxes as taught by *Lerouge et al.* to safely store the ignition elements before they are required to ignite the gas.

9. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over *Bjorkhaug et al.* in view of *Lerouge et al.* as applied to claims 1-2 above, and further in view of *Henwood*.

Bjorkhaug et al. discloses all the limitations of claim 3 except that the ignition device be propelled at a moderate speed and that it may be reversed and returned back into the guidance tube prior to reaction.

Henwood teaches a ignition system for combustible gas in which an ignition flare, mounted on a piston and launched by means of a suitably regulated air pressure medium through a tube to the top of a flare stack/tower (column 2 lines 40-62), has a valve that may be adjusted to relieve the air pressure in the lower portion of the tube and thereby permit the piston to return to its starting position at the base of the tube (column 2 lines 63-67).

Therefore, in regards to claim 3, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify *Bjorkhaug et al.*; to suitably regulate the air pressure so that the speed of the ignition device is moderate, because faster travel of the ignition device could produce a draft capable of prematurely extinguishing the flame or sparks, and to allow the ignition to be returned to its starting position because this allows for the apparatus to be reset even after the ignition device has started to travel along the guidance tube and up until the moment when the ignition device ignites the combustible gas.

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10. Claims 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Bjørkhaug et al.* in view of *Lerouge et al.* as applied to claims 1-2 above, and further in view of *Breese, Jr.* *Bjørkhaug et al.* discloses all the limitation of claims 4-6 except an ignition initiator mounted along the guidance tube and electrical or mechanical activation of the ignition device within the tube.

Breese, Jr. teaches an ignition means adaptable for use with a gas burner comprising an ignitable member (E Fig. 2) propelled through a tube (B1 Fig. 2) and mechanically activated by frictional contact with an abrasive member (D4 Fig. 2) positioned inside the tube.

Therefore, in regards to claims 4-6, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify *Bjørkhaug et al.* to include an ignition initiator mounted along the guidance tube for the purpose of activating an ignition device as taught by *Breese, Jr.*, because this allows the point of activation along the tube to be positioned based on the combustion time of the ignition device, and knowing the total combustion time would allow the ignition initiator to be placed so that the combustion of the ignition device will be complete once it has ignited the combustible gas and the device will be extinguished, posing no threat of fire to the environment surrounding the burner or flare tower.

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11. Alternatively, claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Henwood* in view of *Smith* and *Lerouge et al.* *Henwood* teaches a ignition system for combustible gas in which an ignition flare, mounted on a piston and launched by means of a suitably regulated air pressure medium through a tube to the top of a flare stack/tower (column 2 lines 40-62), has a valve that may be adjusted to relieve the air pressure in the lower portion of the tube and thereby permit the piston to return to its starting position at the base of the tube (column 2 lines 63-67). *Henwood* does not disclose an ignition device undergoing a reaction and activating within the tube to produce a cloud of sparks for the purpose of igniting the combustible gas or a predetermined time for activation and reaction of the ignition device.

Smith teaches a method and apparatus for igniting combustible fuel gases flowing from a flare stack in which a firing device discharges an ignition device in the form of any shell suitable for a gun (column 4 lines 25-26) producing an explosive charge within the barrel (34 Fig. 1) which travels through the barrel and a tube (30 Fig. 1) for the purpose of igniting a gaseous combustible mixture (column 4 lines 47-53). The apparatus includes a control device for the firing of the ignition device in the form of a trigger (42 Fig. 1) with attached firing cord (43 Fig. 2) which runs over a pulley (45 Fig. 1) and extends a safe distance from the apparatus.

Lerouge et al. teaches an ignition device for igniting combustible gas in which the combustion time of the ignition elements (36 Fig. 5) is predetermined based on the distance of a point (7 Fig. 1) above the of the end of a the torch/flare tower (1 Fig. 1) (column 4 lines 15-19) in order for the ignition elements to be entirely extinguished after they have ignited the gas (column

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4 lines 57-60). Lerouge et al. also teaches the use of boxes (23 Fig. 5) which serve to hold or trap cartridges (22. Fig 5) containing ignition elements (36 Fig. 5) prior to reacting and igniting the gas issuing from the torch/flare tower.

Therefore, in regards to claim 1-3, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify *Henwood*; to use the ignition device as taught by *Smith* to cause a reaction in the form of a explosive charge to ignite a source of combustible gas because an explosive charge in the form of a cloud of sparks will be more likely to light a source of combustible gas than a flame which could be extinguished due to wind or other means as it travels up the flare tower, and to provide a predetermined combustion time of the ignition device based on the a particular torch/flare tower as taught by *Lerouge et al.*, because this allows for complete combustion of the ignition device, so that once it has ignited the combustible gas it will not be capable of setting the surrounding environment of the torch/flare tower on fire.

12. Alternatively, claims 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Henwood* in view of *Smith* and *Lerouge et al.* as applied to claims 1-3 above, and further in view of *Swanson* and *Breese, Jr.* *Henwood* discloses all the limitations of claims 4-6 except; a feeding unit and magazine for the ignition device, an ignition initiator mounted along the guidance tube, electrical or mechanical activation of the ignition device within the tube, and a trapping device to hold the ignition device prior to its reaction.

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Swanson teaches an automatic ignition device for starting fires having a primer magazine assembly (14 Fig. 2) connected to a disc (106 Fig. 2), which is filled with caps (104 Fig. 2). The caps are positioned or fed into a striker pin portion (84 Fig. 2) by a primer cap aligning assembly (16 Fig. 2).

Breese, Jr. teaches an ignition means adaptable for use with a gas burner comprising an ignitable member (E Fig. 2) propelled through a tube (B1 Fig. 2), and mechanically activated by frictional contact with an abrasive member (D4 Fig. 2) positioned inside the tube.

Therefore, in regards to claims 4-6, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify *Henwood*, to include feeding and magazine units as taught by *Swanson*, because these units allow for efficient automated loading and replacement of ignition devices, and to include an ignition initiator mounted along the guidance tube for the purpose of activating an ignition device as taught by *Breese, Jr.* because this allows the point of activation along the tube to be positioned based on the combustion time of the ignition device, and knowing the total combustion time would allow the ignition initiator to be placed so that the combustion of the ignition device will be complete once it has ignited the combustible gas and the device will be extinguished, posing no threat of fire to the environment surrounding the burner or flare tower.

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Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. *Hamilton* is included to show additional art concerning gas flare ignition using ignition tubes. *Strashok* is included to show additional art concerning flare stacks ignited with an ignition device launched through a tube. *Lapp* is included to show additional art concerning time delayed ignition. *Geimer* is included to show additional art concerning pneumatic launchers for flare ignitors.

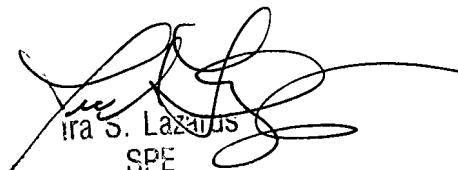
14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Exr. Josiah Cocks whose telephone number is (703) 305-0450. The examiner can normally be reached on weekdays from 8:00 to 5:00 .

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ira S. Lazarus , can be reached on (703)308-1935 . The fax phone number for this Group is (703)308-7764.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0861.

jcc

7/30/98


Ira S. Lazarus
SPE
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